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PRE-HOSPITAL REDUCED-DOSE FIBRINOLYTIC THERAPY FOLLOWED BY EMERGENT PERCUTANEOUS INTERVENTION REDUCES INFARCT SIZE AND LIMITS MICROVASCULAR OBSTRUCTION IN PATIENTS TREATED WITHIN SIX HOURS OF STEMI ONSET WITHOUT A BLEEDING PENALTY

i2 Poster Contributions
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Session Title: DES I and Acute Coronary Syndromes
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Background: The ultimate treatment goal in acute myocardial infarction is rapid restoration of coronary blood flow. In general, fibrinolysis can be initiated earlier than primary percutaneous intervention (PPCI); however, fibrinolysis lacks the efficacy and durability of PPCI. Multiple combinations of fibrinolysis and mechanical reperfusion have been previously evaluated; however, results of these trials have been mixed.

Methods: We treated 903 STEMI patients between March 2005 and June 2009. One-third of these patients were treated with pre-hospital fibrinolytics followed by urgent PCI. Many patients also underwent delayed enhancement cardiac MRI. Using previously described methods, we measured microvascular obstruction (MVO) and infarct size in 300 patients.

Results: Complete imaging and clinical data was available for 124 patients. Groups were well matched for age, cardiac risk factors and ischemic time. STEMI patients receiving pre-hospital fibrinolytics demonstrated smaller infarcts on MRI. Pre-hospital treated patients also developed less microvascular obstruction. Mean change in hemoglobin was similar, and there were no life threatening bleeding events.

	Pre-Hospital Fibrinolysis + PCI (N=75)	Primary PCI (N=49)	P-Value
Age (yrs)	58.7 +/-11.5	57.3 +/-10.6	0.886
Scar Volume (cm3)	14.9 +/-16.3	21.5 +/-17.7	0.055
Scar Volume (% myocardial mass)	9.5 +/-7.0	12.7 +/-9.0	0.038
MVO (cm3)	1.41 +/-2.97	3.22 +/-5.36	0.001
MVO (% scar volume)	5.4 +/-6.0	9.2 +/-10.0	0.001
Avg. Hb Loss (gm)	2.4 +/-1.5	2.0 +/-1.4	0.328

Conclusions: In STEMI patients presenting early after symptom onset, pre-hospital reduced-dose fibrinolytic therapy leads to smaller infarcts and less microvascular obstruction without increased bleeding risk compared to primary PCI.